Mixed Immiscible Liquids Vacuum, Separation, and Disposal Method and System (Mod 1)

Abstract - A system to collect by vacuum conveyance, separate, and discharge two mixed immiscible liquids with different specific gravities comprising a prefilter vessel **200**, a vacuum tank **100**, an optional heavy phase intermediate separation stage **40**, and an optional light phase intermediate separation stage **30**. Vacuum tank **100** is under a constant regulated vacuum, which sucks mixed immiscible liquids with different specific gravities from their respective remote source(s) through conduit(s) connected to vacuum tank **100**. Collection conduits can have manually, mechanically, or electro-mechanically controlled valves at their source ends. Any grit, sediment, particles, and/or floatable debris in the collection conduits is first removed, and then any entrained air in the mixed liquid stream is removed, from the mixed liquid stream prior to undergoing any phase separation stages. Initial phase separation occurs automatically in vacuum tank **100** without any phase interface detection devices. Vacuum tank **100** provides quiescent conditions for gravity separation of mixed immiscible liquids. Gravity separation is further enhanced by low grade dissolved air flotation separation which is induced by the vacuum in vacuum tank **100**. Additional phase separation can occur, if necessary, in intermediate separation stage(s) **40** and/or **30**. Heavy phase intermediate separation stage **40** separates the light phase from the heavy phase, if necessary. Light phase intermediate separation stage **30** separates the heavy phase from the light phase, if necessary. Separated phases are discharged to their own individual repository or depository, such as a storage tank, a sewer, well injection, additional separation, additional treatment to remove other contaminants, and/or process reuse.